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ABSTRACT

This study investigated the perceptions of teachers regarding their own professional development along five distinct constructs (teaming, time, organizational support, communication, and professional responsibility). It also compared the perceptions of teachers utilizing a team-based approach to professional development with the perceptions of those who did not. Teachers in five public school districts in Pennsylvania completed the Professional Development Inventory. All of the districts were participating in an integrated framework project which focused on the integration of arts, history, civics, English, and geography through team-based professional development. Results indicated that teachers considered teaming to be the most significant factor, followed by communication and time. The paper discusses a professional development model that includes the specific components found to make a difference between successful and unsuccessful sites (board support, utilization of research to support instruction, common planning time, team teaching opportunities, administrative cooperation, and recognition). (Contains 13 references.) (SM)

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Introduction

For years, the term "professional development for teachers" has been an oxymoron, as teachers have been directed to "attend this in-service" or "study this program" or "go to this county instruction day." For decades, teachers have been herded here and commanded there in the stereotypically paternalistic style of a school district, and characteristically, the teachers have obediently followed orders. It is now time to stop these traditionally unsuccessful and repetitious practices. It is now time to offer a process and a model that first looks at what it is that teachers value and what it is that teachers believe most helps them in their day-to-day delivery of instruction. More importantly, it is time to look at a model that is supported by research focused on the area of professionalism.

Most school district-based professional development focuses on broad, general topics intended to meet the goals of the school district. Unfortunately, this type of in-service only superficially meets the needs of elementary, middle and secondary teachers for the delivery of diverse curriculum content. District-based professional development programs are typically viewed by participants as being too general to be relevant to their teaching assignments. In addition, professional development programs are generally scheduled in accordance with the collective bargaining agreements and most often end up being three to five days spread out over the school year. These in-service days are structured as one-shot occurrences with little or no systematic follow-up. It is not surprising that this type of professional development does not

lead to substantive, systemic change in the areas of curriculum and instruction (National Foundation for the Improvement of Education, 1996).

While changes improving the impact of professional development have been seen in many districts (e.g., teacher induction programs, peer coaching, professional development schools), teachers need to become more actively involved in, and take greater responsibility for, their own professional development. Teachers who are actively involved in their own professional development, who have access to teacher networks, enriched professional roles, and collegial work, feel more positive about staying in the profession (Darling-Hammond, 1996). When teachers feel more like true professionals, and are treated as such, they are more committed to the profession and more effective in the classroom (Haggstrom et al., 1988; McLaughlin & Talbert, 1993; Rosenholtz, 1989). Clearly, professional development needs to foster teacher professionalism through networking, inquiry, and reflection with more effective, problem-based approaches that are built into teachers' ongoing work with colleagues (Darling-Hammond, 1996). Teachers must engage in learning about their own learning, in studying about their own teaching, and in sustaining relationships with other teachers (Sykes, 1996). To truly reform education, teachers, rather than policy-makers, must play a more active role in improving teaching and learning. By taking an active role through team-based professional development, teachers can move the profession closer to true, systemic reform.

Team-based professional development is a model whereby small teams of teachers with common interests help one another learn more about their own learning, study and reflect upon their own teaching, develop ongoing, sustained professional relationships with each other and take greater responsibility for their own professional growth and development. From a statewide

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curriculum integration project involving 11 school districts across Pennsylvania, Melnick and Schubert (1997) identified a set of factors that, when in place, enhanced a school's chances of success in the project. Utilizing a qualitative, muti-site, modified analytic induction design, factors identified in the literature delineating the roles of teachers and administrators in school reform (e.g., Peters, et al., 1995; Williams & Reynolds, 1993; Wepner, 1993) and those that foster a successful organizational climate (e.g., Fullan, 1991; Osbourne, 1993) were examined. Factors such as provision of adequate resources (i.e., mainly time to work together), teacher teaming, organizational support, and communication were thought to be of critical importance and were present in the five most successful sites. The remaining six sites, less successful in their project efforts, were thought to have been lacking in one or more area.

Based upon previous research (Melnick & Schubert, 1997; Witmer & Melnick, 1997) regarding the effectiveness of this type of "team-based" professional development, this study was intended to (1) assess the perceptions of teachers regarding their own professional development along five distinct constructs (Teaming, Time, Organizational Support, Communication, and Professional Responsibility), and (2) compare the perceptions of teachers utilizing a team-based approach to professional development with their colleagues who did not. The results of this study have led to refinement of the team-based professional development model.

Methodology

This research utilized both qualitative and quantitative methodology. A qualitative, multi-site, modified analytic induction design was used to explore factors found in the literature thought to be important to professional development efforts and supported by previous research

by the authors (i.e., Teaming, Time, Organizational Support, Communication, and Professional Responsibility). These factors were used as the basis for teacher interviews and observations at selected school sites across Pennsylvania that were implementing a team-based professional development pilot program. Interviews were conducted (n=20) and the interview format was modified slightly as new cases contributed to a greater understanding of factors contributing to each site's successful reform efforts. Each interview was tape-recorded and transcribed for further analysis. Based upon those interviews and previous research, a 38-item Professional Development Inventory was constructed to assess the five dimensions identified (See Appendix A). To establish evidence of content validity, the 38 items were presented to practicing teachers along with the conceptual definitions for each construct (see Appendix B). Respondents were asked to read each item carefully and indicate which of the five constructs the item fit. Items that were placed into the intended *a priori* category by 90% or more of the teachers were validated for use on the instrument. Items receiving less than 90% agreement were evaluated and edited to better fit the category intended. Using an experimental/control group design, this study sought to determine if teachers in the pilot project who utilized a team-based approach to professional development were significantly different than their colleagues who did not, with respect to the five constructs identified (Teaming, Time, Organizational Support, Communication and Professional Responsibility).

Data Source. Five public school districts across the state of Pennsylvania participated in this study. All of the districts were participating in the Keystone Integrated Framework Project, a federally funded curriculum integration initiative focusing on the integration of the arts, history, civics, English, and geography through a team-based professional development model.

The school districts included in the study represented rural, suburban, and urban schools at the elementary, middle and high school levels. Teachers in each district responded to the Professional Development Inventory regardless of whether or not they had participated in team-based professional development (i.e., Keystone Integrated Framework Project). There was a total of 185 teachers in the sample across the five districts with 58 in the experimental group (team-based professional development) and 127 in the control group (traditional in-service only).

Data Analysis. Because multiple dependent variables were utilized in the analyses, a multivariate procedure was employed. Discriminant function analysis was performed to determine if the five constructs were useful in contributing to separation of (i.e., differences between) the two groups. That is, based upon the scores on each scale of the Professional Development Inventory, was there some combination of factors that would determine group membership (experimental or control)? Predictor variables were Communication, Organizational Support, Professional Responsibility, Teamwork, and Time. Follow-up analyses were completed to provide for finer interpretations of the data. For the purpose of this analysis, respondents were separated into groups according to those who participated in the team-based professional development (experimental) and those who did not (control).

Results

Estimates of internal consistency reliability (Cronbach's alpha) were computed for each of the five constructs. Table 2 displays the number of items representing each scale along with the calculated alpha. Alpha reliabilities for an affective measure should be approximately .70 or above (Gable & Wolf, 1993). As can be seen in the right hand column of Table 1, reliabilities

for three of the scales (Organizational Support, Teamwork, and Time) exceed .70 (.77, .81, and .81 respectively). Professional Responsibility is close with a reliability estimate of .68; Communication has a reliability estimate of .61. Both of these latter scales contain only four items. Reliabilities can be strengthened through the addition of a few items on each scale in subsequent administrations of the PDI.

Of the original 185 cases, 28 were dropped from the analysis due to missing data leaving a total of 49 in the team-based group and 108 in the control group. Missing data were scattered across cases and variables with no apparent patterning. One discriminant function was calculated resulting in $\lambda = .90$ and $\chi^2 = 16.75$, $p \leq .01$.

A loading matrix of correlations between the predictor variables (Communication, Organizational Support, Professional Responsibility, Teamwork, and Time) and the discriminant function (see Table 2) suggests that Teamwork is the primary variable in distinguishing between the team-based and control groups. Team-based teachers tended to be more professionally involved with their colleagues (mean=3.93) than did teachers in the control group (mean=3.56).

Also contributing to discrimination between these two groups are Time and Communication. Team-based teachers tended to be slightly more positive about having time to meet and plan with colleagues (mean=3.26) than did the control group (mean=2.83). To a lesser extent, there were also differences regarding the extent to which team-based teachers communicated with various constituencies (mean=3.46) than did the control group (mean=3.25). Loadings less than .30 are not interpreted. With the use of a classification procedure, 65% of the cases were classified correctly.

Follow-up Analyses. Although the contribution of the Teamwork, Communication, and Time seem substantial (particularly Teamwork), finer interpretations of the data are desirable. In particular, individual items that contributed to the overall separation between the groups were sought so that specific refinements to the team-based model could be suggested. One additional discriminant function was calculated utilizing a step-wise analysis including all 38 items resulting in $\lambda = .74$ and $\chi^2 = 45.18$, $p \leq .001$.

Table 3 indicates the six items that contributed to the greatest separation of the two groups (Numbers 10, 15, 16, 18, 25, and 27). Not surprisingly, the items represented Communication (10), Time (15), Teamwork (16, 18) and Organizational Support (25, 27). All items are considered to be significant predictors. Utilizing this combination of items as a classification procedure resulted in 71.4% of the cases being classified correctly.

Discussion

Teamwork emerged as the most significant scale with lesser contributions from Communication and Time. The analysis identifying the six items that made the most significant contributions to separation between the groups provides the greatest insights as to why the experimental group appeared to be more effective in accomplishing their goals. The following sections will interpret the contribution of each of the items based upon the researchers' observations of these teams during annual site visits over a three year period.

My colleagues and I notify the newspaper of school activities (#10). The mere act of notifying the newspaper of school activities is probably less significant than the underlying

reasons teachers do so. Communicating about their successes brings important positive attention to the team and to the work they are doing. Teachers who notify the newspapers are undoubtedly proud of their accomplishments and believe what they are doing is noteworthy. Such recognition validates the importance of the profession and the contributions made by teachers. These teachers have an understanding of the power of the media and seek to use it in a positive way.

Other teachers and I meet together to discuss instructional strategies (#15). Interestingly, not all teacher teams had time scheduled as part of the school day to meet together. In fact, most felt so strongly about the importance of this that they *made* time to meet even if the school district did not provide it. Many had informal meetings before or after school, met during their scheduled lunch times, or, in some cases, got together on a few Saturdays for planning purposes. These teachers believed strongly in collaboration but were self-confident teachers in their own right. The sharing of instructional strategies and ideas was an important part of their own professional growth.

My colleagues and I work together to find research to guide and support our teaching (#16). This item turned out to be the most important issue in any of the analyses. Teachers who sought out the latest research had a better understanding of why particular strategies worked and why others failed. The most successful teams were actively engaged in action research and were continually evaluating their own teaching in light of current research in the field. It was clear they kept up with reading professional journals and, as a result, understood and respected the theories that underlie their instruction. Four of the five most effective teams participated in professional conference presentations. All of the effective teams exhibited a high degree of professionalism.

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I team-teach with at least one other teacher (#18). Without exception, successful teams saw the advantage to working together and sharing not only instructional strategies (#15 above) but also working together to take advantage of each other's strengths. Teachers had a belief that team-teaching not only enriched the content, but also enhanced its delivery. Teachers reported increased student interaction and saw gains in achievement. Teachers who team-taught seemed to be more self-confident.

The school board supports new initiatives (#25). Contributing to the overall organizational climate, the school board played a pivotal role at each site. Although not involved in the day-to-day operation of the various team initiatives, the board's support (verbal, if not financial) was important to the teachers. Not only did it create an atmosphere in which their teachers' expertise was valued, but it also exemplified an attitude of professionalism that permeated the district.

The administration built the schedule based on our instructional needs (#27). Likewise, as with board support, administrative cooperation was important to the teachers involved. Building the schedule around teachers' instructional needs demonstrated the respect that administrators had for teachers as professionals. These administrators were secure in their roles and did not feel threatened by teacher input into traditionally administrative issues (i.e., scheduling). There seemed to be a symbiotic relationship between teachers and administrators that was uncharacteristic at other sites.

Framework for a Model

As a result of this and previous research, it is clear that certain factors need to be in place for effective professional growth and development of teachers. A school site considering implementing team-based professional development will benefit from following the guidelines of this model while also taking into account the culture of its own institution. Begin with a willing team, one comprised of teachers who are already confident in their own performance and have demonstrated success in the classroom. A team to be successful must also be committed to respecting one another's skills, points of view, and knowledge. The following sections discuss specific components of the model found to make the difference between successful and unsuccessful sites (Board Support, Utilization of Research to Support Instruction, Common Planning Time, Team-teaching Opportunities, Administrative Cooperation, and Recognition).

Board Support. While team-base professional development can be initiated by either administration or the teachers themselves, it must first have the support of the school board. The building administrator should first seek approval for this professional development design from the superintendent and request permission to meet with the curriculum committee (or other appropriate committee) of the school board. (Depending upon the teachers' contract with the board it may also be necessary to clear this design with the union. If that is the case, it is the teachers who should first approach their union representatives if they are the ones initiating the design.) By meeting with the board committee the building administrator can present the design and discuss informally the initiatives of the plan. This provides a comfort level in which the board committee can ask questions and interact out of public view, thus resolving any initial

misconceptions, misgivings, and misunderstandings. More importantly, such a meeting assures baseline support with the board committee as a stakeholder. Following this, once the team of teachers has met and plans are better formulated, the team and the principal should present their plan to the board. Whether the presentation is in writing or in person, the proposal should be well-prepared and research-based. Someone needs to represent the team at the time the board takes action on the proposal in case there are additional questions. As the team-based professional development progresses, periodic written reports should be made to the board. These reports keep the board informed so that the team and the board are insured against unexpected challenges by interest groups who may raise questions. It is always good practice to keep all stakeholders informed, particularly the governing body of the institution. Later, students who experience the instructional results of the teachers participating in team-based professional development should make oral presentations to the board. Through this presentation students can demonstrate some of the skills learned in the classroom as a direct result of the instructional strategies learned through the team-based professional development process.

Utilization of Research to Support Instruction. Arrangements should be made to have space so that the research can be conducted collaboratively. Space which is shared by the team members will lead to more collaboration in the research, first as primary discussion, then in integrating the findings. Paper, books, and materials will accumulate and even sources from the Internet will be "downloaded;" therefore, storage space is needed in a common location. At the very least, the team needs a computer of its own allows for the research to proceed without interruption. It also adds credence to the team's belief in and commitment to work in research. As much current research is readily accessed via the Internet, it is important for each team

member to have an account. This will not preclude research at a university library, but on-site access to information will expedite and encourage not only more research but also additional collaboration simply because the team members are based at the same site in conducting their research interests. All team members, as a component of their team-based professional development, should be trained in research design and techniques. It is essential for the team to use research-based teaching strategies, not only because research directs best practices but also because the research process itself is an important skill the teachers should have and will use.

Common Planning Time. Having a designated space for the team is an excellent way to validate the process of team-based professional development. If a complete room is not available, at least an area of a classroom, library, media resource room, or the like should be made available. Meeting in a designated location for common planning time also increases productivity and aids in meetings beginning promptly. What is most valued in having an acknowledged area for the team is the recognition that the work is a professional activity. During their meetings all members of the team should share their various instructional strategies – what they have used (since the previous meeting), discussing what worked and *why*, and plans for any changes. It is very important to establish this routine of input from all team members as this acknowledges the team concept and enriches the discussion. Team members also should keep a log or journal of all discussions to serve as a reflective record both of decisions reached and as a potential resource for later designs of instructional strategies.

Team-teaching Opportunities. In order for team-based professional development to be most effective, the team members should share the same students. An authentic teaching team shares the same students so that these particular students' learning styles, intelligences,

personalities, work styles, and achievement levels can all be part of planning the appropriate instructional strategies. Teams should plan common lessons based on a theme, a unit, standards, or an objective. For purposes of enriching the content it is best to have a framework. Beginning with a theme, unit, standard, or objective will help the team organize and collaborate toward a product. If possible the team should develop and teach from the same (integrated) curriculum. Team-teaching should evolve into an integrated curriculum which is not only more manageable than numerous individual curricula, but also is a pedagogically sound element of school reform. A synthesized, integrated curriculum, based on research and developed over time through collaborative efforts is much richer than one designed and delivered by an individual. Shared ownership of the curriculum also leads to more frequent changes as research leads the planning.

Opportunities for teaching together in the same room should be sought. Teaching together provides the opportunity to interact with another's teaching style and subject knowledge, thus enriching the delivery of instruction. It also allows for teachers to view the same students under the same conditions, rather than discussing student work in the typical frame of reference such as "Stan in my class does ..." and "Stan in your class does ...."

Teams should also collaborate on assessment of the students' work. Once collaboration is established, a common plan for assessment is essential. This method leads to both students and teachers knowing the expectations and the measurement for those expectations and in conveying the resulting assessment to both students and parents.

Administrative Cooperation. In a successful team-based professional development process the principal meets with the team periodically to review their plans. These meetings are important to the common understanding of the benefits of the process. Because team-based

professional development is a change in thinking, open communication and interaction are essential to its success. Part of the team-based professional development should include sharing information and perspectives on organizational systems and designing class schedules. Because most of the misunderstandings between teachers and administrators on class assignments and scheduling are a result of not understanding one another's needs and perspectives, such discussions lead to a common understanding and focus on systemic and organizational structure. As a result, a stronger collaboration can be developed between the team and the principal as teachers review the schedule and make informed suggestions for needed revisions sensitive to the needs of all – the institution, the principal, colleagues, and students. Another benefit of the collaboration is the opportunity for the teacher teams to help design a schedule which can be flexible to their needs without disrupting the schedules of colleagues. This flextime makes it possible for the teacher teams to combine classes and extend time for particular course work and reflects a high level of professionalism (being responsible to meet district requirements).

Recognition. Being publicly recognized in a positive light is important in professional development. Instruction in public relations as part of a team-based professional development model is important in that it formalizes a process of connecting to the public and builds a relationship with the media. Thus, guidelines for publicity should be developed by the teacher teams. These guideline might include such steps as the following:

- Decide collaboratively what is the best work.
- Draft the text, emphasizing the most important elements.
- Provide high quality photos (with identification where applicable).

- Request coverage by the media for major events.
- Write thank-your messages from the team.
- Credit the media in reports the team makes to the board.

The above suggestions emphasize and remind all stakeholders of the professionalism of the team in their collaboration with the community. Additionally, presentations at professional conferences also provide an appropriate outlet for teachers to showcase their accomplishments and contribute to the body of professional literature in their fields.

Educational Implications

Professional development is a major thrust in school reform efforts. Given the expense of these initiatives and the consequences of failure, every effort should be made to ensure success. This study demonstrates the importance of teachers working together in teams toward a common goal, having the support of both the school board and administration to be creative and try new initiatives, and communicating about their successes. Taking the time to work in teams was also an important factor in distinguishing the more effective teams from those that were not. Most importantly, this study leads to a greater understanding of why and how the five most successful sites worked together and how other districts can initiate and sustain such team-based professional development in a variety of settings.

Table 1

Alpha Reliabilities by Scale on the Professional Development Inventory

(n=185)

Scale	Number of Items	Alpha
Communication	4	.61
Organizational Support	13	.77
Professional Responsibility	4	.68
Teamwork	12	.81
Time	4	.81

Table 2

Standardized Canonical Discriminant Function Coefficients for Each Scale (n=157)[1]

Scale	Coefficient
Communication	-.295
Organizational Support	-.133
Professional Responsibility	.214
Teamwork	.887
Time	.325

[1] Note: Sample size is fewer than 185 due to missing data.

Table 3

Standardized Canonical Discriminant Function Coefficients by Item Resulting From a Stepwise Analysis
(n=157)[1]

Item	Scale	Coefficient
10. My colleagues and I notify the newspaper of school activities.	Communication	-.354
15. Other teachers and I meet together to discuss instructional strategies.	Time	.363
16. My colleagues and I work together to find research to guide and support our teaching.	Teamwork	.547
18. I team-teach with at least one other teacher.	Teamwork	.414
25. The school board supports new initiatives.	Organizational Support	.467
27. The administration builds the schedule based on our instructional needs.	Organizational Support	-.524

[1] Note: Sample size is fewer than 185 due to missing data.

Appendix A

Professional Development Inventory

Instructions

The statements below are related to several different aspects of teaching. This survey is intended to determine your perceptions and provide guidance to professional development planners.

Please address the items on this survey in terms of your current professional position. The items address a wide range of issues considered to be essential to good teaching and collaboration. Think in terms of the team of teachers you work with daily.

Please rate each statement according to the following scale by circling the appropriate response.

Strongly Disagree	**Disagree**	**Undecided**	**Agree**	**Strongly Agree**
SD	**D**	**U**	**A**	**SA**

1.	We keep all constituencies informed of new initiatives.	SD	D	U	A	SA
2.	Our teachers work well together.	SD	D	U	A	SA
3.	My district supports me in attending conferences and training sessions.	SD	D	U	A	SA
4.	We use student assessment data to improve our own instruction.	SD	D	U	A	SA
5.	I have the time to discuss important issues with colleagues.	SD	D	U	A	SA
6.	Administration asks my preference of teaching assignments.	SD	D	U	A	SA
7.	I respect my colleagues.	SD	D	U	A	SA
8.	I have planning time each day.	SD	D	U	A	SA
9.	We can alter the daily schedule to meet our teaching needs.	SD	D	U	A	SA

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10. My colleagues and I notify the newspaper of school activities.	SD	D	U	A	SA
11. My colleagues and I make adjustments in our teaching based on student performance.	SD	D	U	A	SA
12. The district provides in-service time to issues we have identified.	SD	D	U	A	SA
13. I make presentations to my colleagues about curriculum or teaching innovations.	SD	D	U	A	SA
14. There is a sense of common purpose among teachers I work with.	SD	D	U	A	SA
15. Other teachers and I meet together to discuss instructional strategies.	SD	D	U	A	SA
16. My colleagues and I work together to find research to guide and support our teaching.	SD	D	U	A	SA
17. The teachers have in-service time to meet for team planning.	SD	D	U	A	SA
18. I team-teach with at least one other teacher.	SD	D	U	A	SA
19. My building principal encourages professional growth.	SD	D	U	A	SA
20. Other teachers and I work together to develop new materials.	SD	D	U	A	SA
21. My colleagues and I collaboratively plan professional development activities.	SD	D	U	A	SA
22. I send home frequent news bulletins about things in my classroom.	SD	D	U	A	SA
23. I feel a professional responsibility to tell others about successful teaching strategies.	SD	D	U	A	SA

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24. We develop plans for improvement.	SD	D	U	A	SA
25. The school board supports new initiatives.	SD	D	U	A	SA
26. I have input into the choice of professional library materials.	SD	D	U	A	SA
27. The administration builds the schedule based on our instructional needs.	SD	D	U	A	SA
28. My administrator finds ways to provide the resources we need.	SD	D	U	A	SA
29. We find time every day to discuss instruction.	SD	D	U	A	SA
30. Teachers work together to improve instruction.	SD	D	U	A	SA
31. Teachers I work with help me choose instructional materials that support our teaching.	SD	D	U	A	SA
32. My colleagues exhibit a high degree of professionalism.	SD	D	U	A	SA
33. My colleagues and I identify our own professional development needs.	SD	D	U	A	SA
34. We keep the administration well informed about our program.	SD	D	U	A	SA
35. The school district provides in-service programs relevant to our instructional needs.	SD	D	U	A	SA
36. I have time to meet during the school day with my colleagues to plan and reflect.	SD	D	U	A	SA
37. The district has provided a professional library containing books and journals for my use.	SD	D	U	A	SA
38. I like the other people on my team.	SD	D	U	A	SA

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